

## A.S. Science

### ADVANCE Program Milestones

**ADVANCE Milestone Requirements:** All ADVANCE students must adhere to the following requirements. For Milestones #1-#3, failure to meet these milestones will prevent a student from matriculating to Mason and/or result in termination from ADVANCE. For Milestones #4-#6, failure to meet these milestones may delay matriculation to Mason.

- Students must complete their NOVA degree within 4 years of being admitted into ADVANCE. Students are highly encouraged to be continuously enrolled at NOVA/Mason to support progress towards degree completion.
- Students must maintain a minimum 2.5 cumulative GPA at NOVA and must have a minimum 2.5 GPA upon matriculation to Mason.
- Students who wish to enroll at Mason for the fall semester must apply for NOVA graduation by March 1 for spring graduation or June 1 for summer graduation. Students who wish to enroll at Mason for the spring semester must apply for NOVA graduation by October 1 for winter graduation.
- Students must begin developmental coursework in no later than the first semester in ADVANCE at NOVA.
- Students must take first college-level MTH course and ENG 111 in the semester immediately following the completion of any MDE or EDE courses (excluding summer).
- In the first 30 credits, students must:
  - Complete ENG 111 and ENG 112 with a C or better.
  - Complete the first college-level MTH course with a C or better.

**ADVANCE Program-Specific Information:** Student may follow this pathway for the Biochemistry options for the B.S. Chemistry pathway; however, the department also offers Analytical Chemistry, Environmental Chemistry, and Materials Chemistry as concentrations. Students may also complete the degree with no concentration. If students are interested in one of these alternatives, they are encouraged to speak with a Mason Chemistry advisor (chem@gmu.edu).

	NOVA DEGREE REQUIREMENT	Credits	Courses	MASON TRANSFER EQUIVALENT	MASON CORE/DEGREE EQUIVALENT
1	SDV Course	1	SDV 100 College Success Skills <b>OR</b> SDV 101 Orientation to XXX	UNIV 100	General Elective
2	ENG 111	3	ENG 111 College Composition I	ENGH XXX	General Elective
3	ITE 115 or General Education	4	CHM 111 General Chemistry I	CHEM 211-213	Nat Science
4	MTH 167 or Science	4-5	MTH 167 Pre-Calculus with Trigonometry <b>OR</b> PHY 202 General College Physics II <sup>1</sup> <b>OR</b> PHY 232 General University Physics II <sup>1</sup> <i>(Only take this PHY course at NOVA if placed directly into MTH 263 and MTH 167 is not needed)</i>	MATH 105 PHYS 245/246 PHYS 260/261/XXX	General Elective or Major
5	MTH 263	4	MTH 263 Calculus I	MATH 113	Quantitative
6	ENG 112	3	ENG 112 College Composition II	ENGH 101	Written Comm
7	MTH 264	4	MTH 264 Calculus II	MATH 114	Major
8	Science Course #1	4	CHM 112 General Chemistry II	CHEM 212-214	Major
9	Social/Behavioral Sciences #1	3	ECO 201 Principles of Macroeconomics <b>OR</b> ECO 202 Principles of Microeconomics <b>OR</b> GEO 210 Introduction to Cultural Geography <b>OR</b> HIS 121 United States History I <b>OR</b> HIS 122 United States History II <b>OR</b> PLS 135 American National Politics <b>OR</b> PSY 200 Principles of Psychology <b>OR</b> PSY 230 Developmental Psychology <b>OR</b> SOC 200 Principles of Sociology <b>OR</b> SOC 211 Principles of Anthropology I	ECON 104 ECON 103 GGG 103 HIST 121 HIST 122 GOVT 103 PSYC 100 PSYC 211 SOCI 101 ANTH 114	Soc/Behav

10	HIS Course	3	HIS 101 History of Western Civilization I <b>OR</b> HIS 102 History of Western Civilization II <b>OR</b> HIS 112 History of World Civilization II	HIST 101 HIST 102 HIST 125	Western Civ
11	Humanities/Fine Arts #1	3	ART 100 Art Appreciation <b>OR</b> ART 101 History and Appreciation of Art I <b>OR</b> ART 102 History and Appreciation of Art II <b>OR</b> CST 130 Introduction to Theatre <b>OR</b> CST 151 Film Appreciation I <b>OR</b> MUS 121 Music Appreciation I	ARTH 101 ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
12	Math or Science #1	3	CHM 241 Organic Chemistry I-Lecture	MTH 213	Major
13	Math or Science #2	2	CHM 245 Organic Chemistry I - Laboratory	CHEM L315	Major
14	Science Course #2	3	CHM 242 Organic Chemistry II - Lecture	CHEM L314	Major
15	Math or Science #2 (with lab above under line #13)	2	CHM 246 Organic Chemistry II - Laboratory	CHEM L318	Major
16	Social/Behavioral Sciences #2	3	GEO 220 World Regional Geography <b>OR</b> HIS 111 History of World Civilization I <b>OR</b> PLS 140 Introduction to Comparative Politics <b>OR</b> PLS 241 International Relations I <b>OR</b> PSY 219 Cross-Cultural Psychology <b>OR</b> SSC 115 Introduction to Global Affairs	GGG 101 HIST L387 GOVT 133 GOVT 132 PSYC L379 GLOA 101	Global
17	CST Course	3	CST 100 Principles of Public Speaking <b>OR</b> CST 110 Introduction to Communication	COMM 100 COMM 101	Oral Comm
18	General Education Elective (This elective is not needed if selections for all other requirements total 60 credits or more)	3-4	BIO 101 General Biology I <b>OR</b> ECO 202 Principles of Microeconomics <b>OR</b> PHI 111 Logic I <b>OR</b> PSY 200 Principles of Psychology <b>OR</b> REL 100 Introduction to the Study of Religion <b>OR</b> SOC 200 Principles of Sociology	BIOL 103/105 ECON 103 PHIL 173 PSYC 100 RELI 100 SOCI 101	General Elective
19	Math or Science #3	4-5	PHY 201 General College Physics I <sup>1</sup> <b>OR</b> PHY 231 General University Physics I <sup>1</sup>	PHYS 243-244 PHYS 160-161-266	Major
20	Humanities/Fine Arts #2	3	ENG 236 Introduction to the Short Story <b>OR</b> ENG 241 Survey of American Literature I <b>OR</b> ENG 242 Survey of American Literature II <b>OR</b> ENG 251 Survey of World Literature I <b>OR</b> ENG 252 Survey of World Literature II <b>OR</b> ENG 253 Survey of African-American Literature I	ENGH 202	Literature

**A.S. SCIENCE DEGREE TOTAL 60-63**

For academic policies and procedures, please see NOVA catalog - <http://www.nvcc.edu/catalog/index.html>

## B.S. Chemistry - Biochemistry

	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
21	Chemistry Courses	4	CHEM 321 Elementary Quantitative Analysis <sup>2</sup>	Major
22	Gen Ed: Written Communication (Upper-level)	3	ENGH 302 Advanced Composition	Written Comm
23	Chemistry Courses	5	CHEM 331 Physical Chemistry I <b>AND</b> CHEM 336 Physical Chemistry Lab I <sup>3</sup>	<b>CHEM 331: Fall Only</b> Major
24	Concentration Courses	4	BIOL 213 Cell Structure & Function	Major
25	Physics Requirement	4	PHYS 260-261 University Physics II with Lab <sup>1</sup> <b>OR</b> PHYS 245-246 College Physics II with Lab <sup>1</sup> <b>OR</b> General Electives (if Physics sequence is complete) (See: Advisor)	Major
26	Concentration Courses	4	CHEM 463 General Biochemistry I	Major
27	Gen Ed: Information Technology	3	Approved IT Course <sup>4</sup>	Info Tech
28	General Electives	1-4	General Elective (See: Advisor)	General Elective
29	Concentration Courses	3	CHEM 446 Bioinorganic Chemistry	<b>Fall Only</b> Major

30	Concentration Courses	5	BIOL 305 Biology of Microorganisms <b>AND</b> BIOL 306 Biology of Microorganisms Laboratory	Major
31	Concentration Courses	3	CHEM/BIOL Elective <sup>5</sup>	Major
32	Concentration Courses	3	CHEM/BIOL Elective <sup>5</sup>	Major
33	Concentration Courses	3	CHEM/BIOL Elective <sup>5</sup>	Major
34	Gen Ed: Synthesis	3	Approved Synthesis Course <sup>4</sup>	Synthesis
35	Concentration Courses	5	CHEM 464 General Biochemistry II <b>AND</b> CHEM 465 Biochemistry Lab	<b>CHEM 464: Spring Only</b> Major
36	General Electives	4	General Elective (Upper-level; See: Advisor)	General Elective

#### **B.S. CHEMISTRY DEGREE**

**TOTAL 120**

#### **Important Academic Information:**

<sup>1</sup>Students must complete the Physics sequence they begin. PHYS 201 AND PHYS 202 or PHYS 231 AND PHYS 232.

<sup>2</sup>For students matriculating to Mason in the fall semester, it is highly recommended that students complete CHEM 321 in the summer semester, if possible.

<sup>3</sup>Students who matriculate to Mason in a fall term will need to split CHEM 331 and CHEM 336 into separate terms to stay on track. See your Mason chemistry advisor for more information.

<sup>4</sup>For approved Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>

<sup>5</sup>For approved concentration courses, please visit: <https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs/#requirementstext>

#### **Additional General Notes & Resources:**

- Students majoring in chemistry must complete the chemistry program requirements with a minimum GPA of 2.30 and present no more than two courses with a grade of 'D' (1.00) in CHEM coursework at graduation.
- Students interested in Pre-Health Professions (Pre-Med, Pre-Dentistry, Pre-Podiatry, Pre-Optometry, Pre-Veterinary, Pre-Pharmacy, Pre-Physician Assistant, Pre-Occupational Therapy, and Pre-Physical Therapy) are strongly encouraged to meet with the Health Professions Advisor regarding the appropriate prerequisite courses for their field of choice. For more information, please visit: <https://prehealth.gmu.edu/>
- Students interested in pursuing licensure to teach at the secondary level may add the Undergraduate Certificate: Secondary Education - Chemistry to this degree. For more information visit: <https://education.gmu.edu/secondary-education-6-12/academics/> . Some certificate courses can be used to fulfill general elective requirements, but additional credits may be needed to complete the certificate. Students interested in teacher licensure should meet with a Mason pre-teacher advisor. Contact information: <https://cehd.gmu.edu/teacher/advising/advising-appointment/>
- ADVANCE students who earn at least a 2.85 cumulative GPA and no more than 9 credits of unrepeatable D/F grades may be eligible to receive a waiver for any lower-level Mason Core courses not already completed. To be eligible for the core waiver, students must also complete the requirements of the AA or AS degree listed on their pathway, and apply to graduate from NOVA by the deadline (see milestone #3). Students must meet these criteria by the time of matriculation to Mason and provide the Office of Admissions a final, official transcript reflecting the degree conferral date.
- For academic policies and procedures, please see Mason catalog - <https://catalog.gmu.edu/policies/>
- Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation.



